

Claims.

1. A method of broadcasting television-quality programmes in real time to a client device in a system comprising a Production Process Centre (PPC) (2), a remote service provider computer (3) and a plurality of remote client devices (4) each of which is connected to the service provider computer (3) by way of an uncontended communication channel (5), the method comprising the production process centre (2) transmitting a television quality programme to the remote client device (4) via the remote service provider computer (3), the method further comprises the step of:

5 (a) the production process centre (2) receiving television programme data from a remote television programme source;

10 (b) the production process centre (2) processing the received television programme data and converting the television programme data into a plurality of digital television programme viewing formats;

15 (c) transmitting at least one of the television programme viewing formats to the remote service provider computer (3) along a dedicated uncontended connection line (6) interconnecting the production process centre (2) and the remote service provider computer (3); and

20 (d) the service provider computer (3) transmitting one television programme viewing format to the remote client device (4) over the uncontended communication channel (5).

25 2. A method as claimed in claim 1 in which the remote service provider computer (3) comprises an Internet Service Provider (ISP) computer and the step of transmitting at least one of the television programme viewing formats to the service provider computer (3) comprises transmitting at least one of the television programme viewing formats to the ISP computer.

3. A method as claimed in claim 1 in which the remote service provider computer (3) comprises a mobile communications network service provider computer and the step of transmitting at least one of the television programme viewing formats to the service provider computer (3) comprises transmitting at least one television programme viewing format to the mobile communications network service provider computer.
4. A method as claimed in claim 1 in which the remote service provider computer (3) comprises a cable network service provider computer and the step of transmitting at least one of the television programme viewing formats to the service provider computer (3) comprises transmitting at least one television programme viewing format to the cable network operator computer.
- 15 5. A method as claimed in any preceding claim in which the step of transmitting at least one television programme viewing format to the service provider computer (3) over a dedicated uncontended connection line (6) further comprises transmitting at least one television programme viewing format to the service provider computer over a dedicated uncontended dual connection link.
- 20 6. A method as claimed in any preceding claim in which the step of transmitting at least one television programme viewing format to the service provider computer (3) over a dedicated uncontended connection line (6) further comprises transmitting at least one television programme viewing format to the service provider computer over a dedicated uncontended satellite link.
- 25 7. A method as claimed in any preceding claim in which the step of processing the received television programme data further comprises decoding the received television programme data into standard Serial Digital Interface (SDI) format.
- 30 8. A method as claimed in any of claims 1 to 6 in which the step of processing the received television programme data further comprises decoding the

received television programme data into standard multi format.

9. A method as claimed in claim 7 or 8 in which the received programme data is passed through a multiple signal decoder (13) to decode the received television programme data into standard format.

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10. A method as claimed in any preceding claim in which the step of processing the received television programme data further comprises editing the received television programme data.

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11. A method as claimed in claim 10 in which the step of editing the received television programme data further comprises inserting advertisement commercials into the received television programme data.

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12. A method as claimed in any preceding claim in which the step of converting the television programme data into a plurality of digital television viewing formats comprises passing the television programme data through a multiple encoding station (16).

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13. A method as claimed in any preceding claim in which the method further comprises the intermediate step of logging the received television programme data in production server computer memory for future use.

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14. A method as claimed in any preceding claim in which the method further comprises the intermediate step of storing metadata relating to each piece of received television programme data in production server computer memory.

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15. A method as claimed in any preceding claim in which the method further comprises the intermediate step of pre-encoding the television programme data before converting the television programme data into a plurality of digital television viewing formats.

16. A method as claimed in any preceding claim in which there is provided a data

centre computer (23) having data centre memory intermediate the production process centre (2) and the service provider computer (3) and connected to the production process centre (2) and the service provider computer (3) by way of the dedicated uncontended connection line (6), and the television programme viewing format transmitted to the remote service provider computer (3) from the production process centre (2) is stored in the data centre memory, the datacentre computer (23) transmitting the television programme viewing format onwards to the remote service provider computer (3).

10            17. A method as claimed in claim 16 in which there are a plurality of data centre computers (23), each data centre computer (23) being connected to at least one other data centre computer (23) by way of a back channel multiple cross connect uncontended connection line, the method including the step of each data centre (23) sharing a television programme viewing format with the data centre computer (23) connected thereto over the back channel multiple cross connect uncontended connection line.

15            18. A method as claimed in claim 16 in which the data centre computer (23) is provided with means to edit the television programme viewing format and the method further comprises the step of the data centre computer editing the television programme viewing format received from the production server computer (2).

20            19. A method as claimed in claim 18 in which the step of editing the television programme viewing format at the datacentre computer (23) further comprises inserting location specific advertisement commercials into the television programme viewing format.

25            20. A method as claimed in any preceding claim in which the method further comprises the initial step of the remote client device (4) selecting a television programme viewing format for reception from the remote service provider computer (3).

21. A method of controlling the transmission of television quality programmes to a remote client device (4) by a service provider computer (3), in a system comprising a plurality of remote client devices (4) each connected to the service provider computer (3) by way of an uncontended broadband connection (5), and a remote production process centre (2) connected to the service provider computer (3), the service provider computer (3) receiving a television quality programme from the remote production process centre (2) and the service provider computer (3) transmitting the television quality programme to the remote client device (4), the method further comprises the steps of:

(a) the service provider computer (3) receiving television-quality programmes from the remote production process centre (2) over a dedicated uncontended connection line (6) inter-connecting the remote production process centre (2) and the service provider computer (3) in a plurality of television-quality programme viewing formats; and

(b) on request from one of the remote client devices (4), transmitting one of the television-quality programme viewing formats received from the remote production process centre (2) to the remote client device (4) over the uncontended broadband connection line (5).

22. A method as claimed in claim 21 in which the initial step of the remote client device (4) selecting a television-quality programme viewing format is performed.

23. A method as claimed in claim 21 or 22 in which the service provider computer (3) comprises an internet service provider (ISP) computer and the ISP computer performs the steps of receiving the television-quality programmes and transmitting one of the television-quality programme viewing formats to the remote client device (4).

24. A method as claimed in claim 21 or 22 in which the service provider computer (3) comprises a mobile communications network service provider computer and the steps of receiving the television-quality programmes and transmitting one of the television-quality programme viewing formats to the remote client device (4) are performed by the mobile communication network service provider computer.

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25. A method as claimed in claims 21 or 22 in which the service provider computer (3) comprises a cable network service provider computer and the cable network service provider computer performs the steps of receiving the television quality programmes and transmitting one of the television quality programme viewing formats to the remote client device (4).

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15 26. A method as claimed in any of claims 21 to 25 in which the method further comprises the step of inserting advertisement commercials into the television-quality programmes by the service provider computer (3) before onward transmission to the remote client device (4).

20 27. A method as claimed in any of claims 21 to 26 in which the method further comprises the step of the service provider computer (3) monitoring television-quality programmes sent to a remote client device (4).

25 28. A method as claimed in claim 27 in which the service provider computer (3) generates billing information for a remote client device (4) based on the monitoring of television-quality programmes sent to that remote client device (4).

30 29. A method as claimed in any of claims 21 to 28 in which there is further provided a remote data centre computer (23) connected to the dedicated uncontended connection line (6) intermediate the service provider computer (3) and the remote production process centre (2) and television-quality programmes are passed through the data centre computer (23) en route to the service provider computer (3).

30. A method as claimed in claim 29 in which the method comprises the step of inserting advertisement material into the television quality programmes by the remote data centre computer (23) before onward transmission to the service provider computer (3).  
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31. A method of receiving real time television-quality programmes in a client device (4), the client device being part of a system comprising a plurality of client devices (4) each connected to a remote service provider computer (3) by way of an uncontended communication link (5), and a remote production process centre (2) connected to the remote service provider computer (3) by a dedicated uncontended connection line (6) therebetween, the method comprising the steps of:  
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15 (a) the client device (4) making a television-quality programme viewing request to the remote production process centre (2) via the remote service provider (3); and

20 (b) receiving the television-quality programme associated with the television quality programme viewing request in a suitable television quality programme viewing format.  
25 32. A method as claimed in claim 31 in which the method includes the initial step of the client device (4) selecting a suitable television quality programme viewing format from a plurality of available television quality programme viewing formats.

30 33. A method as claimed in claims 31 or 32 in which the service provider computer (3) is an Internet Service Provider (ISP) computer and the step of making a television quality program viewing request to the remote production process centre (2) is made via the ISP computer.

34. A method as claimed in claims 31 or 32 in which the service provider computer (3) is a mobile communications network service provider computer and the step of making a television-quality program viewing request to the remote production process centre (2) is made via the mobile communications network service provider computer.

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35. A method as claimed in claim 31 or 32 in which the service provider computer (3) is a cable network service provider computer and the step of making a television quality program viewing request to the remote production process centre (2) is made via the cable network service provider computer.

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36. A method as claimed in any of claims 31 to 35 in which the method further comprises the initial steps of the client device (4) registering with the remote service provider computer as a system user.

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37. A system for broadcasting television-quality programmes to a client device (4) comprising a production process centre (2), a remote service provider computer (3) and a plurality of remote client devices (4) each connected to the remote service provider computer (3) by way of an uncontended communication link (5), the production process centre (2) transmitting a television-quality programme to the remote client device (4) via the remote service provider computer (3), the system further comprising:

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(a) a dedicated uncontended connection line (6) inter-connecting the production process centre (2) and the service provider computer (3), the production process centre (2) sending the television-quality programme to the service provider computer (3) along the dedicated uncontended connection line (6);

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and the production process centre (2) comprising:

(b) a receiver for receiving television programme data from a remote television programme source;

(c) a processor for processing the received programme data and means to convert the television programme data into a plurality of digital television viewing formats;

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(d) a transmitter for transmitting the television quality programme in at least one of the digital television viewing formats to the service provider computer along the dedicated uncontended connection line.

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38. A system as claimed in claim 37 in which the remote service provider computer (3) comprises an Internet Service Provider (ISP) computer.

39. A system as claimed in claim 37 in which the remote service provider computer (3) comprises a mobile communications network service provider computer.

40. A system as claimed in claim 37 in which the remote service provider computer (3) comprises a cable network service provider computer.

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41. A system as claimed in any of claims 37 to 40 in which the production process centre's processor further comprises means to decode a plurality of incoming data formats into a single standard format.

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42. A system as claimed in any of claims 37 to 41 in which the production process centre comprises a pre-encoder to pre-encode the television programme data.

43. A system as claimed in any of claims 37 to 42 in which the production process centre's means to convert the television programme data into a plurality of digital television viewing formats comprises a multiple encoding station (16).

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44. A system as claimed in any of claims 37 to 43 in which the production process centre (2) has production process centre memory and means to log television

programme data in production process centre memory.

45. A system as claimed in claim 44 in which the production process centre has means to store metadata relating to television programme data in production process centre memory.

5 46. A system as claimed in any of claims 37 to 45 in which the dedicated uncontended connection line (6) is a dual-connectivity dedicated uncontended connection line.

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47. A system as claimed in any of claims 37 to 46 in which there is additionally provided a satellite link (21) connecting the production process centre (2) and the remote service provider computer (3).

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48. A system as claimed in any of claims 37 to 47 in which there is provided a remote data centre computer (23) connected to the dedicated uncontended connection line (6) intermediate the production process centre (2) and the remote service provider computer (3) acting as an interface between the production process centre (2) and the remote service provider computer (3), all data traffic between the production process centre (2) and the service provider computer (3) passing through the remote data centre.

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49. A system as claimed in claim 48 in which the remote data centre computer further comprises a media server computer having means to receive and transmit television quality programming data.

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50. A system as claimed in claims 48 or 49 in which there are a plurality of data centres, each datacentre being connected to at least one other datacentre by way of a multiple back channel cross connect uncontended connection line.

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51. A system as claimed in any of claims 48 to 50 in which there are a plurality of service provider computers located adjacent each data centre computer (23) and the data centre computer (23) controls the flow of television-quality programme data to each of the service provider computers (3).

52. A system as claimed in claims 48 to 51 in which the data centre computer (23) comprises means to edit television programme data received from the production process centre (2).

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53. A system for broadcasting television-quality programmes to a remote client device (4) comprising a remote production process centre (2), a service provider computer (3) and a plurality of remote client devices (4) each connected to the service provider computer (3) by way of an uncontended communication channel (5), the service provider computer (3) receiving a television-quality programme from the remote production process centre (2) and transmitting the television-quality programme onwards to a remote client device (4), the system further comprising:

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(a) a dedicated uncontended connection line (6) interconnecting the remote production process centre (2) and the service provider computer (3), the service provider computer (3) receiving the television-quality programme from the remote production process centre (2) over the dedicated uncontended connection line (6) in a plurality of television-quality programme viewing formats; and

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(b) the service provider computer (3) having a receiver for receiving a television viewing request from a remote client device and a transmitter for transmitting one of the television-quality programme viewing formats over the uncontended connection line (5) to the remote client device.

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54. A system as claimed in claim 53 in which there is provided a remote data centre computer (23) connected to the dedicated uncontended connection line (6) intermediate the service provider computer (3) and the remote production process centre (2) and television-quality programmes are passed through the data centre computer (23) en route to the service provider computer (3).

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55. A system as claimed in claims 53 or 54 in which the service provider computer (3) is an Internet Service Provider (ISP) computer.
56. A system as claimed in claims 53 or 54 in which the service provider computer (3) is a Mobile Communications Network service provider computer.
57. A system as claimed in claim 53 or 54 in which the service provider computer (3) is a cable network service provider computer.
- 10 58. A system as claimed in any of claims 53 to 57 in which the service provider computer (3) has means to monitor the television viewing requests of each of the remote client devices (4).
- 15 59. A system as claimed in any of claims 53 to 58 in which the service provider computer (3) has means to edit the television quality programmes.
- 20 60. A computer program comprising program instructions for causing a computer to carry out the method steps performed by the production process centre (2) in any of claims 1 to 20.
61. A computer program comprising program instructions for causing a computer to carry out the method steps performed by the service provider computer (3) in any of claims 21 to 30.
- 25 62. A computer program as claimed in claims 60 or 61 in which the program is stored on a computer readable medium.
63. A computer program as claimed in claims 60 or 61 in which the program is stored on a carrier signal.